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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,843	07/31/2003	Yasuhito Anzai	OKI 363	1956

23995 7590 05/20/2004

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EXAMINER

GARCIA, JOANNIE A

ART UNIT PAPER NUMBER

2823

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/630,843	Applicant(s) ANZAI, YASUHIITO	
	Examiner Joannie A Garcia	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0515</u> . | 6) <input type="checkbox"/> Other: ____ |

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The disclosure is objected to because of the following informalities: On page 1, line 17, "anther" after "from one", should be replaced with --another--.

Appropriate correction is required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, and 8, recite the limitation "openings in the lower surface" in lines 7, and 9, respectively. There is insufficient antecedent basis for this limitation in the claims.

Claims 1, and 8, recite the limitation "openings in the upper surface" in lines 7-8, and 9-10, respectively. There is insufficient antecedent basis for this limitation in the claims.

Claims 1, and 8, recite the limitation "upper surface side" in lines 12, and 14, respectively. There is insufficient antecedent basis for this limitation in the claims.

The term "roughly" in claims 5, 6, 12, and 13, is a relative term, which renders the claims indefinite. The term "roughly" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. If applicant intends a particular angle, it should be clearly recited.

Claims 7, and 14, recite the limitation "plurality of adjacent openings" in line 2. There is insufficient antecedent basis for this limitation in the claims.

Claims 7, and 14, recite the limitation "lower surface side" in lines 2-3. There is insufficient antecedent basis for this limitation in the claims.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 7, are rejected under 35 U.S.C. 102(b) as being anticipated by Schwiebert et al (U.S. Patent 5,880,017).

Schwiebert et al discloses a ball electrode forming method comprising preparing a semiconductor apparatus 320 having semiconductor devices and a plurality of electrode pads 322 electrically connected to the semiconductor devices (Figure 3A), applying fluxes on the electrode pads (Figure 3B, and Column 8, lines 7-10), arranging a metal mask 326 having an upper surface and a lower surface, a plurality of openings extended from the upper surface to the lower surface on a surface of the semiconductor apparatus having the electrode pads formed thereon so that the surface of the semiconductor apparatus and lower surface of the mask can face each other (Figure 3B, and Column 6, lines 37-40), wherein a plurality of adjacent openings are interconnected in a lower surface side (Figure 3B), and wherein said metal mask include non-vertical walls such as tapered apertures for improved release (Column 6, lines 30-32), therefore, formation of a metal mask having an area of openings in the lower surface being larger than an area of openings in the upper surface would have been achieved, arranging solder balls 338 on the electrode pads arranged in the openings from an upper surface side of the mask (Figure 3C),

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and electrically connecting the solder balls to the electrode pads to form ball electrodes (Figure 3C).

Claims 3-6, and 9-16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 8 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956 until 2/4/04. See MPEP 203.08.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Joannie Adelle García whose telephone number is (571) 272-1861. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571) 272-1855. The fax number for this group is 703-872-9306 for before final submissions, 703-872-9306 for after final submissions and the

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customer service number for group 2800 is (703) 872-9317. Updates can be found at

<http://www.uspto.gov/web/info/2800.htm>.


JAG

May 15, 2004

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